

NewsRelease

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A NEW WAY TO EXPLORE THE SURFACE OF MARS

Students from North Carolina State University (NCSU) are helping NASA expand the exploration of the surface of Mars. The team of students and researchers has designed a wind-powered rover that can be blown, like tumbleweed, across the surface of the Red Planet collecting atmospheric and geological samples at multiple locations.

Media Opportunity: Members of the media are invited to attend a demonstration of the Mars Tumbleweed rover at 1:00 p.m. Wednesday, May 14, at the H.J.E. Reid Conference Center, 14 Langley Blvd., NASA Langley Research Center. Please contact Kimberly W. Land at (757) 864-9885 or 344-8611 (mobile) for credentials.

In the Aerospace Design class at NCSU, the team of nine students and their faculty advisor researched concept and prototype development, studied wind tunnel testing, and performed actual field-testing with the tumbleweed rover. The idea to study a "Mars Tumbleweed" for the class project was initiated by team leader David Minton, while working as an intern at NASA Langley Research Center in the summer of 2002. "Interning at NASA was great. We got to do some really exciting research," says Minton. His summer experience paved the way for the student project topic.

The students studied how the tumbleweed harnesses the wind for movement using its intricate lightweight branch structure. By imitating the way the prairie plant operates in nature, the team was able to apply their knowledge to designing the rover concept.

The students constructed a prototype rover called the Tumbleweed Earth Demonstrator (TED), scaled for use on Earth and based on NASA Langley concepts. The student-built rover will aid the Mars exploration effort at Langley, by providing preliminary data that will influence future tumbleweed design concepts.

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Current Mars rover models are very complex and expensive, and their ability to traverse rough terrain is limited. Landing sites must be carefully chosen to ensure the safety of the vehicle and the ability to carry out the mission. Therefore, many scientifically interesting Martian sites are now inaccessible.

A future mission scenario could disperse multiple Tumbleweed rovers to roam the surface of Mars carrying instruments with unique sensors to search for water or investigate climate. For more information about the Mars Tumbleweed student project at NC State University, visit:

<http://www.mars-tumbleweed.org>

For more information about the Mars exploration efforts at NASA Langley, visit:

<http://www.larc.nasa.gov>